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FACTS ABOUT ANTU

Prepared in the Division of Wildlife Research

ANTU is the code designation for the chemical alphanapthylthiourea. This substance was discovered to be a useful Norway rat poison by Dr. Curt P. Richter, Johns Hopkins Hospital, Baltimore, Md., while he was working under a grant of funds from the Committee on Medical Research, of the Office of Scientific Research and Development, during World War II. Although the poison was tested early in 1942, little information could be released because of security regulations enforced by the Army.

ANTU is a light gray powder, quite insoluble in water in most organic solvents. It is stable to ordinary heat but will melt at about 180 degrees Centigrade. It has no odor, but its taste varies with individuals--many people claim that it is entirely tasteless, while others find it intensely bitter. There is no known antidote for this poison, and treatment is limited to the use of emetics to remove the toxic agent and carthartics to eliminate it.

In Norway rats, ANTU causes death by changing the permeability of the blood vessels in the thoracic area, and the animal dies from drowning in its own body fluids, which accumulate in the pleural cavity around the lungs.

It is much more toxic to Norway rats than to the black, Alexandrine, or frugivorus forms. Even young Norways are more resistant to it than are adults. A small sublethal dose will cause the development of a tolerance to future quantities. This tolerance is very marked for several days but is lost after about 2 weeks. Rats that have survived this poison will refuse for several weeks to eat baits containing it.

This poison is dangerous to dogs as well as to rats, and must be used cautiously when pets are roaming freely in the areas where treated baits are to be exposed. It is not highly toxic to monkeys, and presumably that would hold true of man. Diet has a great deal to do with the susceptibility of an animal to the poison--carnivores, as a class, seem to be more susceptible than are herbivorous species.

In spite of its variable characteristics, ANTU has been shown to be a useful new poison, particularly in the control of rats. Several methods have been suggested to make its use effective, among which are the following:

1. Mixed with food baits.--In Norway rat habitats, 1 percent of ANTU in the bait is adequate. Where both Norways and blacks are present, 5 percent should be used. The bait and the poison should be mixed as evenly as possible. To do this, the ANTU may be blended with 5 times its own weight of flour, and this mixture dusted over the food as it is being stirred. Any palatable food attractive to rats may be used.

2. Dusted over food piles.--For using ANTU in this way, it is suggested that the rats be prebaited to eat at certain locations through the repeated exposure of small piles of unpoisoned food for several nights. Then the usual piles of food are placed and pure ANTU is dusted over them and the surrounding floor until a thin film has been sprinkled on the food and about a foot on each side.

3. Dusted over the surface of water.--This method is not very effective, as ANTU is insoluble and tends to collect around the edge of the container. It is not recommended by the Fish and Wildlife Service.

4. Dusted along runways.--Attempts to increase the efficiency of ANTU led workers in the United States Public Health Service to try dusting the powder on rat runways. This unique way of using it gave somewhat better results in the black rat areas. Modifications in formulas followed the first tests, and at present the mixture becoming more or less standard is: 20 percent ANTU, 2 percent DDT, and 78 percent pyrophyllite. This formula will tend to control the rats and the fleas on them at the same time.

5. Dusted in burrows.--This method has been used by both Dr. Richter and the Public Health Service. The pure ANTU or the composite formula given above is pumped into the burrow with a foot-pump duster such as is used in the application of calcium cyanide dust.

The Fish and Wildlife Service, which has been experimenting with ANTU since late in 1942, concludes that it is useful when used in a rotation of poisons; it should not follow itself in any operation. It will be more satisfactory in areas where Norways compose the entire rat population. It is practically ineffective against mice.

ANTU is covered by a public patent made out to the Secretary of War, and at least one manufacturing company is producing it commercially.

NOTE.--ANTU is a new poison, and the Wildlife Research Laboratory, Fish and Wildlife Service, 546 Custom House, Denver, Colo., would be glad to receive reports of any unusual experiences with it.